

NATIONAL ELECTRIC VEHICLE INFRASTRUCTURE PROGRAM

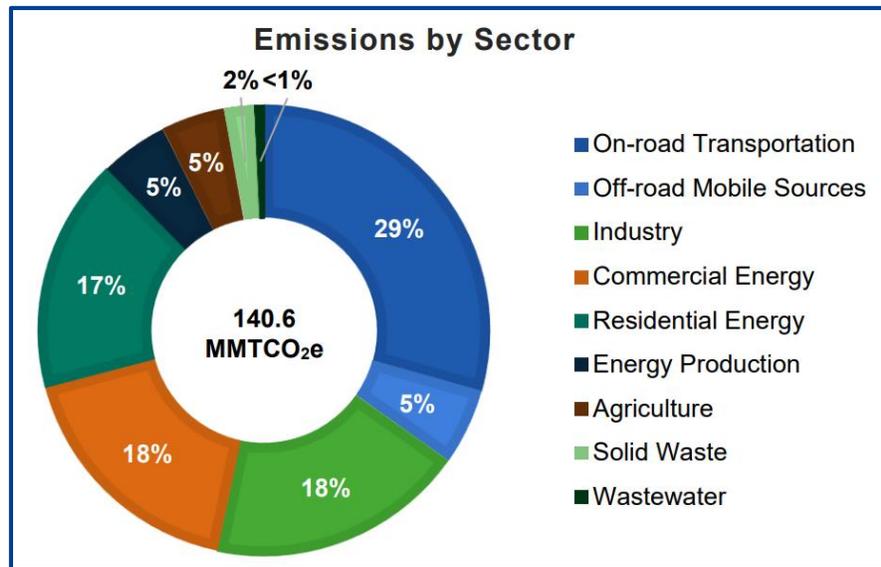
| Angel Deem, VDOT Chief of Policy

September 21, 2022

Background

Emissions

- Transportation is leading source of emission in Virginia and nationwide
- Electrification seen as an essential tool to reduce transportation emissions



Department of Environmental Quality

Electrification

- VA is 11th nationally in electric vehicle (EV) registrations (45,000 currently)
- Automaker electrification commitments and investments
 - Planned investments of \$130B in EV manufacturing through 2030
 - Several Large Vehicle Manufacturers committed to 100% electric by 2035

Electric Vehicles



Hybrid Electric Vehicles (Hybrids)

- Internal Combustion Engine combined with one or more Electric Motors
- Use energy stored in a battery plus gasoline to operate the combustion engine
- Battery is charged by regenerative braking, not plugging in



Plug in Hybrid Electric Vehicles (PHEVs)

- Powered by an Internal Combustion Engine and an Electric Motor
- PHEVs can operate in all-electric mode
- PHEVs have larger batteries than HEVs and can be plugged in to charge



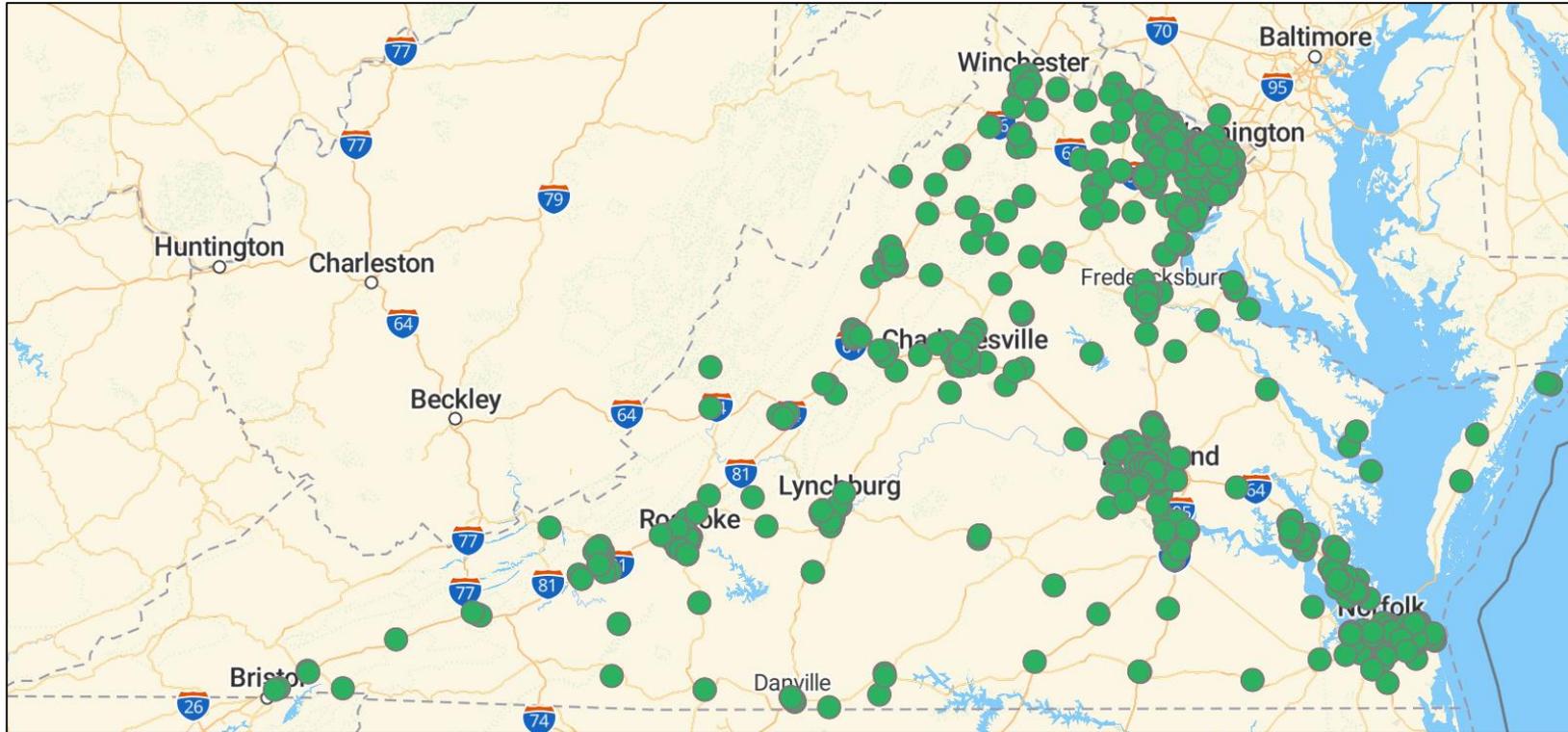
Battery Electric Vehicles (BEVs)

- Operate solely on electric motors in all-electric mode
- Charged by plugging in to charging equipment
- Typical driving ranges from 150 to 400 miles

Electric Vehicle Charging



Virginia EV Charging Infrastructure



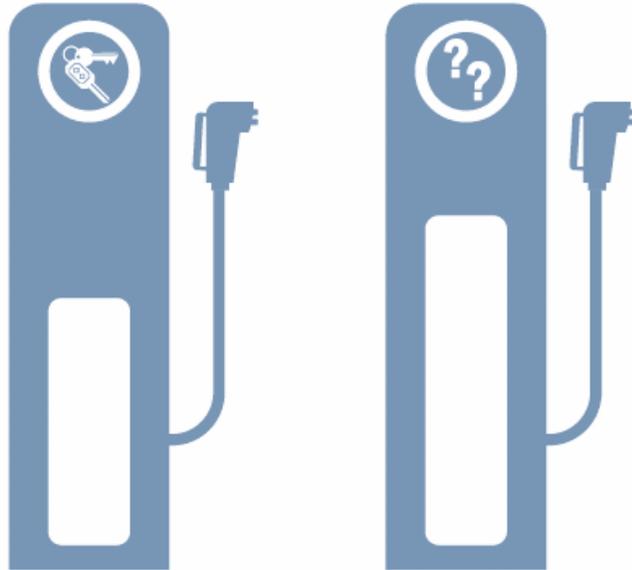
Alternative Fuels Data Center

- 1,139 public stations providing 3,301 charging ports across all charging speeds
- 139 stations equipped with Direct Current fast chargers (DCFCs)
- **17 DCFCs meet NEVI criteria -**
 - 1 mile from interstate
 - Every 50 miles
 - 4 ports per station
 - 150 kW per port

2021 EV Readiness Study

59% OF CURRENT
EV OWNERS

81% OF THOSE
CONSIDERING AN EV



**NOTED THE DIFFICULTY OF FINDING A
CHARGING STATION AS A BARRIER***

*Percentage of participants that rated the difficulty of finding a charging station a very important concern

Virginia Transportation Electric Vehicle Readiness Study

- ‘Range anxiety’ and difficulty finding a charging stations identified as a primary barrier to EV adoption
- Continue building EV charging infrastructure to provide all Virginians with convenient, reliable, and affordable access
 - Fill gaps in existing charging network
 - Expand community charging

National Electric Vehicle Infrastructure (NEVI) Program

- Authorized by Infrastructure Investment and Jobs Act (IIJA)
- IIJA and FHWA Guidance establish program requirements
- Strategically deploy EV charging infrastructure and establish an interconnected national charging network to facilitate data collection, access, and reliability.
 - Goal of 500,000 chargers nationwide by 2030
- Support travel, reduce range anxiety, accelerate awareness
- \$100 million in federal formula funding over 5 years for Virginia
 - VDOT is lead agency, under the direction of the Secretary of Transportation

NEVI Charging Stations

- **Installation/upgrade of publicly accessible direct current fast chargers**
 - 1 mile from interstate, every 50 miles, 4 ports per station, 150 kW per port
 - On-site distributed energy resources
 - 5 years of operations and maintenance funding
- **Third parties will acquire, install, own, operate, and maintain**
 - Provide minimum 20% match



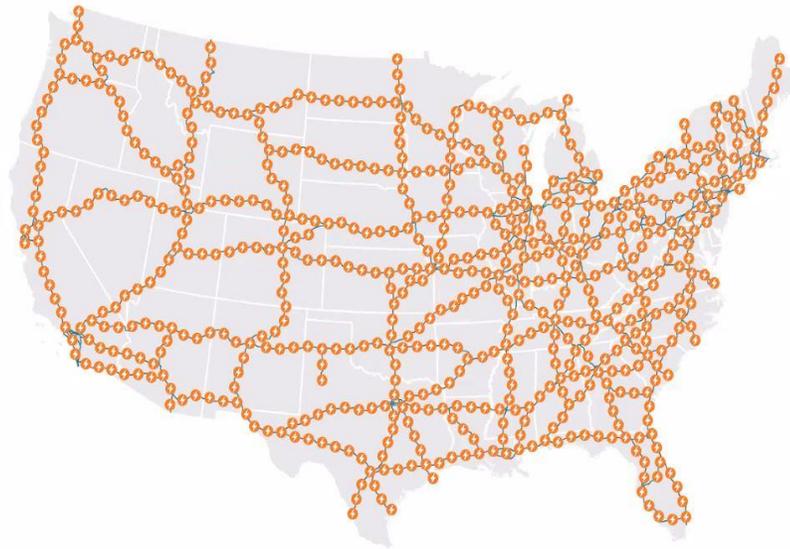
EV Update Media



UC San Diego News Center

Alternative Fuel Corridors (AFCs)

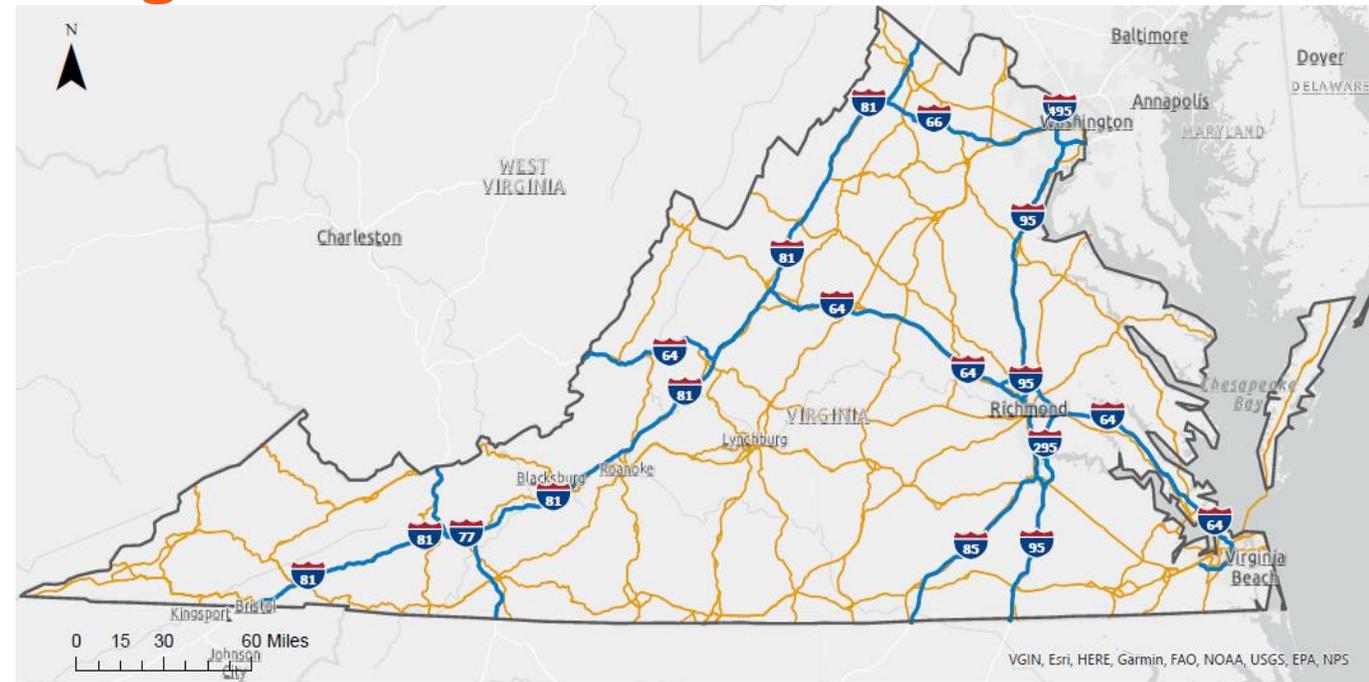
Nationally:



Connecting regions and ensuring an EV charging network that is convenient, accessible, reliable, and equitable.

Joint Office of Energy and Transportation

Virginia:



Virginia AFCs:

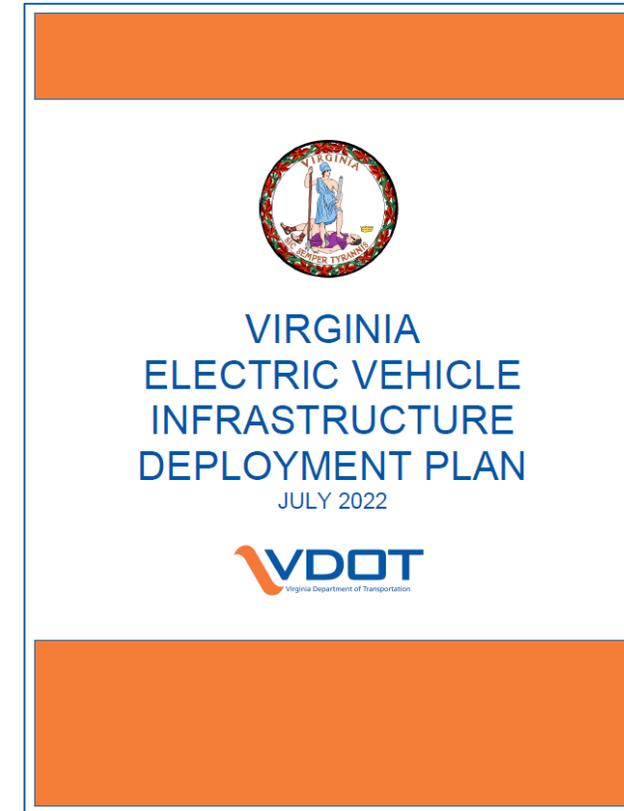
985 miles

I-64, I-66, I-77, I-81, I-85, I-95,

I-295, I-495

EV Charging Infrastructure Deployment Plan

- NEVI Program required states to develop and submit to FHWA by August 1, 2022
- FHWA Guidance and Template
- VDOT lead agency, with guidance from Secretary of Transportation's office
- Approval by September 30, 2022
 - VDOT has made minor revisions in response to initial FHWA feedback



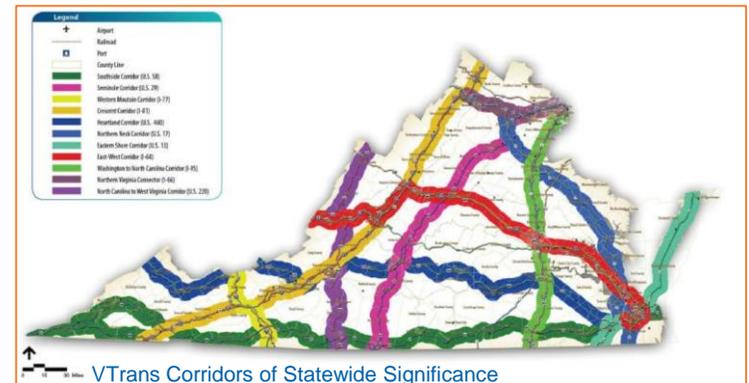
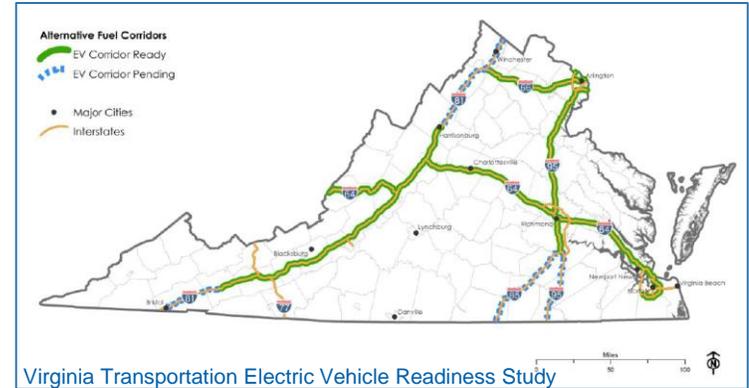
Planning Phases

Phase 1
(2022-2023)

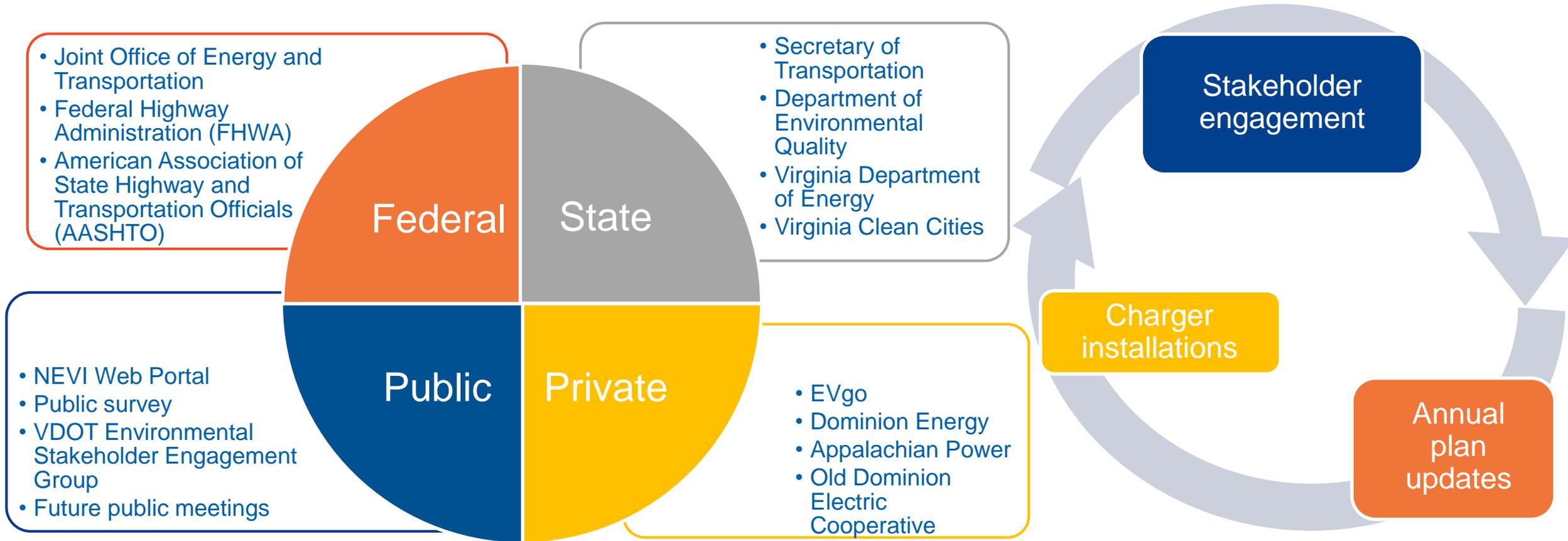
- ✓ **Nominated** additional Alternative Fuel Corridors
- ✓ Initial stakeholder and public outreach
- ✓ Developed **Initial EV Charging Deployment Plan**
 - **Build out** Alternative Fuel Corridors

Phase 2
(2023-2026)

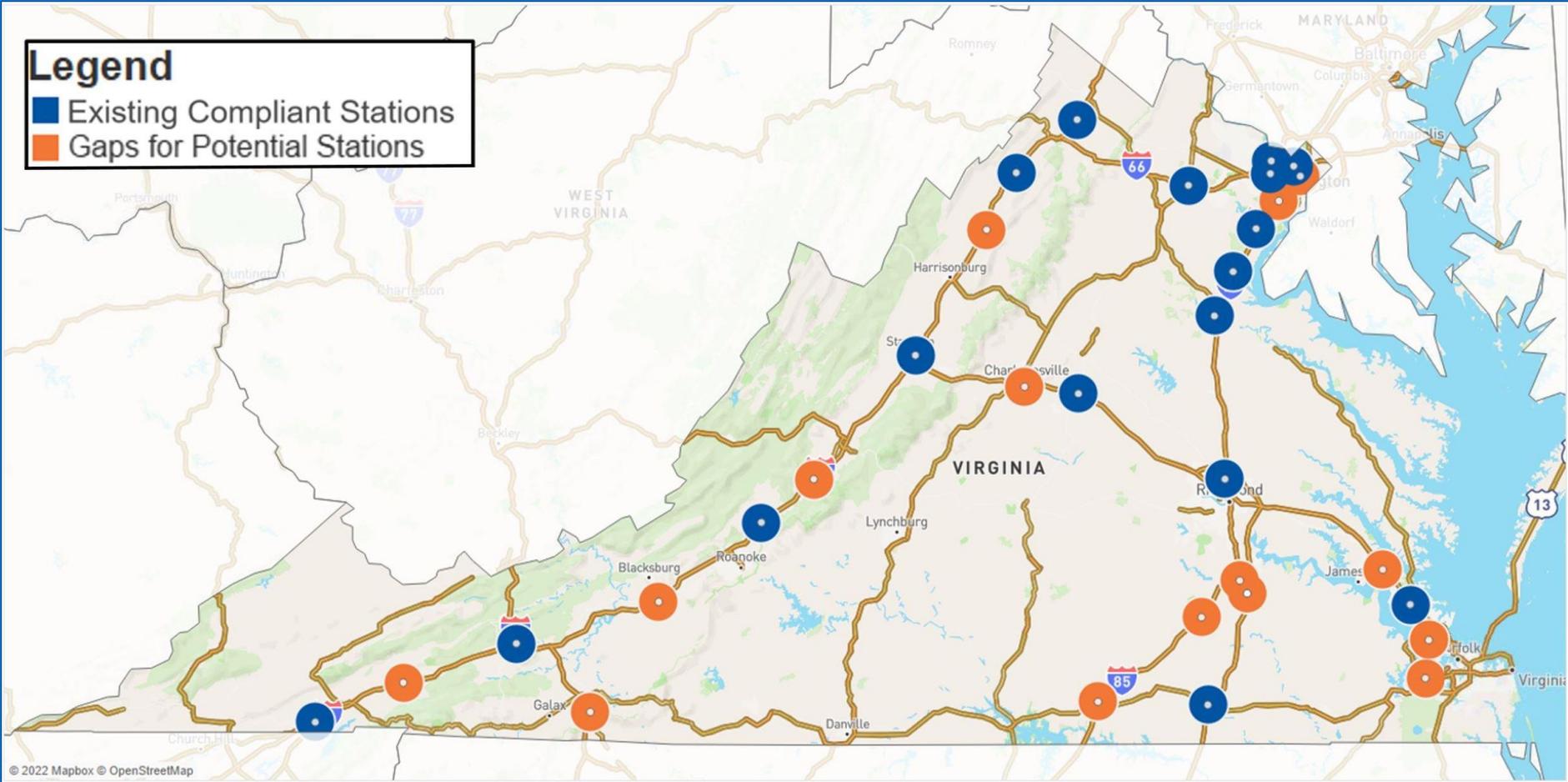
- Ongoing stakeholder engagement
- Annual EV Charging Deployment Plan **updates**
- Consider expansion to **Corridors of Statewide Significance and community charging**



Stakeholder Engagement & Iterative Planning Process



Existing and Potential AFC Sites



NEVI Program Next Steps

- Deployment Plan approval by September 30, 2022
- Funding opportunity for third party procurement of chargers
- Build out Alternative Fuel Corridors
- Ongoing stakeholder engagement and public outreach
- Annual Plan updates and charger funding opportunities
- CTB Engagement and Actions prior to Grant Awards

Looking Ahead ... Discretionary Grant Program for Charging and Fueling Infrastructure

- Authorized by IIJA
- Federal guidance is forthcoming
- \$2.5 billion in discretionary grant funding over 5 years
- State and local authorities that own publicly accessible transportation facilities
 - \$1.25 billion Corridor Charging Grant Program
 - Focused on filling gaps in Alternative Fuel Corridors
 - \$1.25 billion Community Charging Grant Program
 - Focused on rural areas, low- and moderate-income neighborhoods and communities with limited private parking